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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,151	03/02/2004	Richard F. Vargo JR.	HES 2003-IP-012871U1	3168
7590 10/24/2005			EXAMINER	
ATTN: CRAIG W. RODDY HALLIBURTON ENERGY SERVICES GROUP 2600 SOUTH SECOND STREET DUNCAN, OK 73536			SUCHFIELD, GEORGE A	
			ART UNIT	PAPER NUMBER
			3676	

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/791,151

Applicant(s)

VARGO ET AL.

Examiner

George Suchfield

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) 27-66 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7 and 9-26 is/are rejected.
- 7) ☒ Claim(s) 6 and 8 is/are objected to.
- 8) ☒ Claim(s) 1-66 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/2/05</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-26, drawn to a method of cementing a well, classified in class 166, subclass 250.14.
  - II. Claims 27-47, drawn to a method of affecting annular pressure build-up in a well annulus, classified in class 166, subclass 250.12.
  - III. Claims 48-66, drawn to a composition, classified in class 507, subclass 202.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I, II and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the composition of the Group III invention could be used in processes other than the Group I and II inventions, e.g., it could be used in any above-ground fluid handling system or in a surface soil treatment process.
3. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because it does not affect the annular pressure through the collapse or a reduction in volume of the hollow particles during the cementing process. The subcombination has separate

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utility such as being used to control the annular pressure in conjunction with any type of well operation or process, such as perforating, cleaning or well workover.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Craig W. Roddy on October 18, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 27-66 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

8. The use of the trademark SPHERELITE has been noted in this application, e.g., in Para [0024]. It should be capitalized wherever it appears and be accompanied by the generic terminology. Specifically, no generic terminology or description of SPHERELITE has been provided.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3, 9-17 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al (4,530,402).

Smith et al discloses a process of cementing a well wherein a spacer fluid is injected into the well annulus in conjunction with the injection of a cementing slurry. The cementing slurry sets and hardens in the annulus between the formation or borehole wall and the well casing.

Insofar as Smith et al does not require or specify that the spacer fluid must be completely and totally displaced from the casing/formation annulus, it is deemed that at least a portion of the spacer fluid will inherently or necessarily remain in the annulus during the setting of the cement, depending especially on the length of the casing, and will thus become “trapped” within such annulus, e.g., due to at least some adherence to the borehole wall during circulation and/or upon

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the closing of one or more circulation valves during the cement setting phase, as called for in claims 1-3.

As per claim 9 and 10, the spacer fluid of Smith et al (col. 3, lines 21-30) may also be either aqueous-based or non-aqueous based.

As per claim 11, the spacer fluid is clearly “pumpable”.

As per claim 12, the spacer fluid medium or “base fluid” is deemed present (note cols. 5 and 6) within the overall range recited.

As per claims 13-16, insofar as the process of Smith et al employs hollow particles or spheres which appear constructed from similar materials, such as synthetic borosilicate, it is deemed that the such hollow particles or spheres will behave in the spacer fluid of Smith et al in the manner(s) as recited in these claims.

As per claim 17, the amount of hollow spheres or particles present in the spacer fluid injected in the process of Smith et al comprising 0 ppg to 15 ppg, appears to fall within the recited concentration range of “1% to about 80% by volume”.

As per claim 21, Smith et al may further include a viscosifier in their spacer fluid.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4, 5, 7 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (4,530,402) as applied to claim 1 above, and further in view of Buchanann et al (5,783,822).

Buchanan et al (note, e.g., the Abstract) discloses a method of cementing a well wherein a tracer is included in the well cementing slurry.

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to similarly include a tracer in the cementing slurry employed by the method of Smith et al, as taught by Buchanann et al, in order to determine or measure the extent of the cementing slurry location or emplacement within the casing annulus, as called for in claim 4. Further in this regard, the cementing slurry including the tracer, as comprising a specific slug or amount of slurry, is deemed to comprise a tracer “pill”, as broadly recited.

With respect to claims 5 and 22, the tracer compounds or components utilized appear to encompass a tracer “bead”, as broadly recited. Moreover, to employ the tracer as a “bead” would have been an obvious matter of choice or design, based on, e.g., cost effectiveness or availability, relative to other tracer materials.

13. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (4,530,402) as applied to claim 1 above, and further in view of Reddy et al (6,722,434).

Reddy et al discloses the inclusion of a gas-generating additive in a well treating fluid which, in one embodiment may include a spacer fluid for use in a process of cementing a well (note col. 2, lines 16-28).

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to similarly include a gas-generating additive or component in the cementing

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spacer fluid injected in the process of Smith et al, as taught by Reddy et al, in order to impart beneficial properties to such spacer fluid, such as minimizing any pressure build-ups that may occur in the spacer fluid upon exposure to temperature increases in the well.

The specific gas-generating additive(s) of claim 19 are encompassed by Reddy et al; the concentration range recited in claim 20 appears included or encompassed by the corresponding concentrations utilized in Smith et al, as modified by Reddy et al.

14. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (4,530,402) as applied to claim 1 above, and further in view of applicant's admission of prior art.

It is observed that in Para [0027] of the specification, applicant indicates that other additives for spacer fluids, including the sodium metasilicate and acid pyrophosphate components in claims 23-26, are all "commercially available ... under the tradenames "FLOW CHEK" and "SUPER FLUSH", as well as the tradename "MUD FLUSH" .

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to add or include such commercially-available spacer fluid additives, as noted above, into the spacer fluid utilized in the cementing process of Smith et al, in order to tailor the spacer fluid to the specific formation or well environment actually encountered in the field or provide enhanced spacer fluid characteristics, such as improved ability to displace drilling fluid residue from the annulus. The actual amount(s) or concentration of silicate/metasilicate and/or acid pyrophosphate included in the spacer fluid, as recited in claims 24 and 25, would have been an obvious matter of choice or design, based on, e.g., routine experimentation for process optimization and/or the characteristics and properties of the encountered formation and/or well environment.



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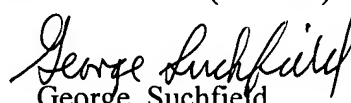
15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Claims 6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
George Suchfield  
Primary Examiner  
Art Unit 3676

Gs  
October 19, 2005